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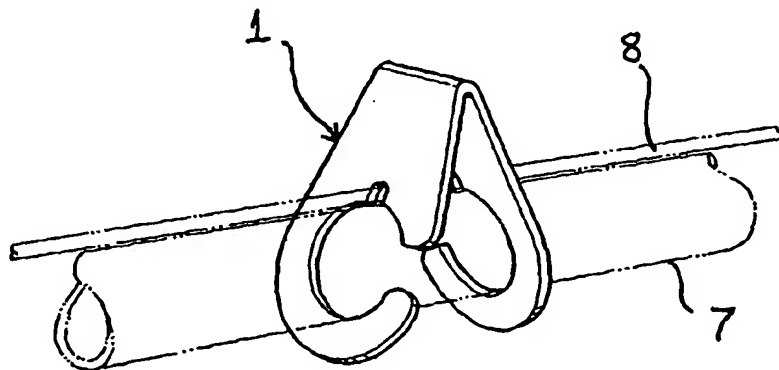
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: TWIST CLIP



(57) Abstract: A clip for securing an elongate cylindrical member (7) to a support wire (8). The clip comprising a thin elongate flexible member (1) having a longitudinal axis and a central web having a transverse axis substantially at right angles to the said longitudinal axis, and two oppositely facing substantially semi-circular hook members at opposed ends of the flexible member (1). The clip also having two spaced apart notches in the central web lying substantially on the longitudinal axis and substantially equidistantly from the transverse axis, each notch having an opening facing away from said transverse axis, and wherein the clip is foldable about the transverse axis.

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## **TWIST CLIP**

### **TECHNICAL FIELD**

The invention relates to a clip for securing an elongate cylindrical member to a support wire and more particularly relates to a clip for securing a water pipe or irrigation tube below a continuous support wire. The invention has applications in the horticulture and viticulture industries.

### **BACKGROUND**

In the horticulture and viticulture industries it is common to secure an irrigation tube or water pipe below a continuous support wire by means of tying wire or other inexpensive fasteners such as cable ties and the like. A problem associated with the use of such wire and other fasteners is that they are time consuming and labour intensive.

The present invention seeks to ameliorate the securing of an elongate cylindrical member such as an irrigation tube to a continuous support wire by providing a clip which can easily be secured to the cylindrical member and the support wire.

### **SUMMARY OF INVENTION**

In one aspect the present invention consists a clip for securing an elongate cylindrical member to a support wire, said clip comprising a thin elongate flexible member having a longitudinal axis and a central web having a transverse axis substantially at right angles to said longitudinal axis, two oppositely facing substantially semi-circular hook members at opposed ends of said flexible member, and two spaced apart notches in the central web lying substantially on said longitudinal axis and substantially equidistantly from said transverse axis, each notch having an opening facing away from said transverse axis, and wherein said clip is foldable about said transverse axis.

Preferably said clip on one side of said transverse axis is a transposed mirror image of said clip on the other side of said transverse axis.

Preferably said hook members have a substantially constant radial extent.

Preferably said clip is adapted to be folded and manipulated by a user in a single-handed operation such that said semi-circular hook members can be engaged with said elongate cylindrical member and said notches are engaged with said wire.

Preferably said clip is made of plastic.

Preferably said clip is made of polypropylene.

Preferably said cylindrical member is a water pipe or irrigation tube.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of a clip in accordance with an embodiment of the invention in an assembled orientation securing a tube to a support wire.

Fig. 2 is an elevation view of the clip, tube and wire shown in Fig. 1.

Fig. 3 is an end view of the clip, tube and wire shown in Fig. 1.

Fig. 4 is an end view of the clip shown in an unfolded flat orientation.

#### MODE OF CARRYING OUT THE INVENTION

Figs. 1-4 depict a first embodiment of a clip in accordance with the present invention. The clip comprises a substantially flat thin flexible member 1 preferably made of an inexpensive plastic such as polypropylene. Flexible member 1 is elongate with a longitudinal axis L and has a central web 2 and two oppositely facing semi-circular hook members 3, 4 at opposed ends thereof. A transverse axis T, at right angles to longitudinal axis L passes through central web 2.

Flexible member 1 and therefore the clip, is foldable about transverse axis T. Two spaced apart notches 5, 6 are located in the central web and lie on the

longitudinal axis L equidistantly from transverse axis T. The opening of each notch 5, 6 faces away from the transverse axis T. As such, the clip on one side of transverse axis T is a transposed mirror image of the clip on the other side of transverse axis T.

In use, when the clip is folded about the transverse axis T to form a V-shape, as shown in Figs. 1-3, notches 5 and 6 are aligned with each other. In such configuration the two oppositely facing semi-circular hooks 3,4 are also aligned with each other and are able to support a cylindrical member such as a tube 7.

In use, tube 7 may be secured to a wire 8 in a single-handed operation by placing the flat clip between the thumb and forefinger of the user. The user partially bends clip 1 and places it over the top of tube 7 and wire 8. The clip is then rotated or twisted anticlockwise or clockwise over tube 7 and wire 8. This movement will enable clip 1 to securely support tube 7 by sitting on top of the continuous wire 8. The clip once bent thus forms a quick secure fastener which may readily be separated for future repositioning of tube 7 relative to wire 8.

Preferably clip 1 is suitable for use where tube 7, which may be an irrigation tube or water pipe, is to be suspended from support wire 8 in the horticulture and/or viticulture industries. In such an application wire 8 is typically a trellis wire used to support plants.

It should be understood that whilst in the preferred embodiment the present invention is made of plastic, it can in other not shown embodiments be made of metal.

The term "comprising" as used herein is used in the inclusive sense of "including" or "having" and not in the exclusive sense of "consisting only of".

**CLAIMS**

1. A clip for securing an elongate cylindrical member to a support wire, said clip comprising a thin elongate flexible member having a longitudinal axis and a central web having a transverse axis substantially at right angles to said longitudinal axis, two oppositely facing substantially semi-circular hook members at opposed ends of said flexible member, and two spaced apart notches in the central web lying substantially on said longitudinal axis and substantially equidistantly from said transverse axis, each notch having an opening facing away from said transverse axis, and wherein said clip is foldable about said transverse axis.
2. A clip as claimed in claim 1, wherein said clip on one side of said transverse axis is a transposed mirror image of said clip on the other side of said transverse axis.
3. The clip as claimed in claim 1 or claim 2, wherein said hook members have a substantially constant radial extent.
4. A clip as claimed in any one of claims 1 to 3, wherein said clip is adapted to be folded and manipulated by a user in a one handed operation such that said semi-circular hook members can be engaged with said elongate cylindrical member and said notches are engaged with said wire.
5. A clip as claimed in any one of the preceding claims, wherein said clip is made of plastic.
6. A clip as claimed in claim 5, wherein said clip is made of polypropylene.
7. A clip as claimed in any one of the preceding claims, wherein said elongate cylindrical member is a water pipe or irrigation tube.
8. A clip as substantially hereinbefore described and with reference to the accompanying drawings.

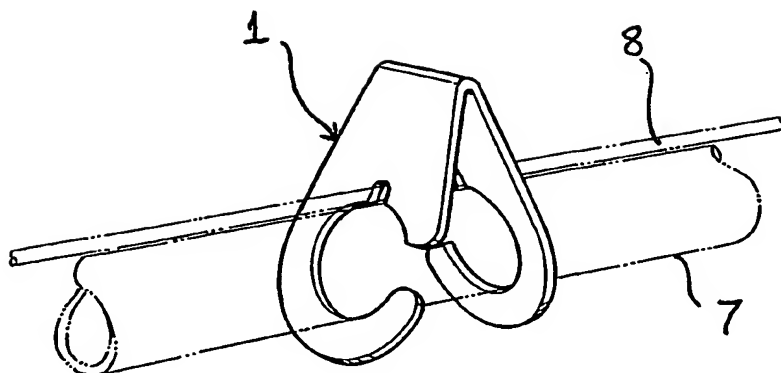


FIG. 1

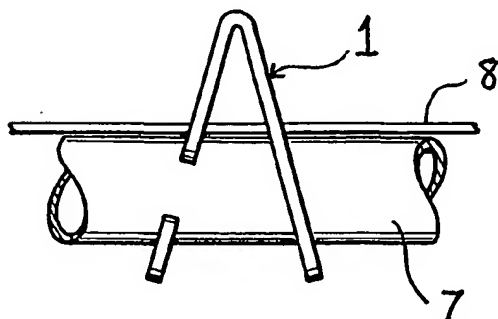


FIG. 2

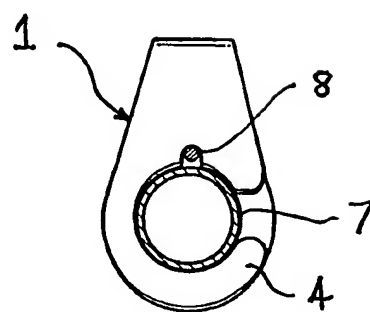


FIG. 3

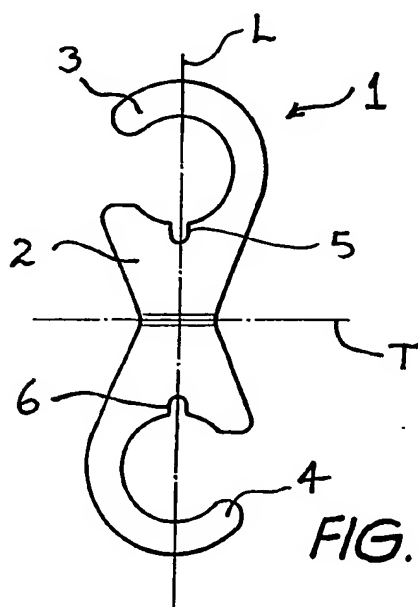


FIG. 4

## INTERNATIONAL SEARCH REPORT

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<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int Cl <sup>7</sup> : F16L 3/10, A01G 17/08		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC F16L 3/10, A01G 17/08, F16B 2/22		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI IPC F16L 3/-, A01G 17/08 & Keywords: flexible, resilient, bend, fold, pliant, pliable, hook		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2092217 A (UNITED-CARR GmbH) 11 August 1982 Whole document	1-8
A	EP 270931 B1 (RAVASIO) 22 January 1992 Whole document	1-8
A	DE 3014578 A (B-S-PLASTIKVERARBEITUNG GmbH) 5 November 1981 Whole document	1-8
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**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member
GB	2092217	NONE	
EP	270931	IT	1214568
DE	3014578	NONE	
			END OF ANNEX